

5. (Amended) The polymersome vesicle of claim 3, comprising a triblock copolymer.

6. (Amended) The polymersome vesicle of claim 3, wherein all of the super-amphiphile molecules are block copolymers.

7. (Amended) The polymersome vesicle of claim 3, wherein the vesicle is prepared together with one or more small amphiphiles.

8. (Amended) The polymersome vesicle of claim 7, wherein at least one small amphiphile is a phospholipid.

10. (Amended) The polymersome vesicle of claim 3, wherein at least one block copolymer is selected from the group consisting of polyethylene oxide (PEO), poly(ethylene) (PEE), poly(butadiene) (PB), poly(styrene) (PS) and poly(isoprene) (PI).

13. (Amended) The polymersome vesicle of claim 3, wherein the vesicle is biocompatible.

14. (Amended) The polymersome vesicle of claim 3, wherein the polymersome encapsulates at least one material selected from the group consisting of drug, therapeutic compound, dye, indicator, waste product, heavy metal, biocide, nutrient, sugar, vitamin, mineral, protein or protein fragment, salt, electrolyte, gene or gene fragment, product of genetic engineering, steroid, adjuvant, biosealant, gas, ferrofluid, and liquid crystal.

15. (Amended) A method of using the polymersome vesicle of claim 3, wherein the method comprises transporting at least one encapsulatable material to or from the environment immediately surrounding the polymersome.

16. (Amended) The method of claim 15, wherein the environment is in a patient, and wherein the method further comprises transporting the encapsulatable material to or from the patient.

17. (Amended) The method of preparing the polymersome of claim 3, comprising at least one step consisting of a film rehydrating step, a bulk rehydrating step, or an electroforming step, or any combination thereof.

18. (Amended) A method of controlling the release of an encapsulated material from a polymersome of claim 3, comprising modulating the composition of the membrane, thereby altering the nature of the encapsulatable material that may be transported to or from the bulk surrounding the polymersome.

A8 20. An encapsulating membrane comprising a semi-permeable, thin-walled encapsulating, amphiphilic membrane prepared by forming the membrane around a droplet of oil in a microemulsion of oil dispersed in an aqueous solution, wherein the membrane comprises one or more synthetic super-amphiphilic molecules.

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Please add the following new claims:

-- 21. The method of using the polymersome vesicle of claim 15, wherein the method comprises delivering at least one material encapsulated by the polymersome to the environment immediately surrounding the polymersome.

A9 22. The method of using the polymersome vesicle of claim 15, wherein the method comprises encapsulating at least one material from the environment immediately surrounding the polymersome into the polymersome, thereby removing the material from the environment by its encapsulation in the polymersome.

23. The method of claim 16, wherein the method further comprises delivering at least one material encapsulated by the polymersome to the patient, and wherein the encapsulated material is selected from the group consisting of a drug, therapeutic composition, medicament, dye, indicator, nutrient, sugar, vitamin, mineral, protein or protein fragment, salt, electrolyte, gene or gene fragment, product of genetic engineering, steroid, adjuvant, biosealant, waste product, heavy metal, and gas.

24. The method of claim 16, wherein the method further comprises encapsulating at least one material from the patient into the polymersome, thereby removing the material from the patient by its encapsulation in the polymersome, followed by removing the polymersome and the material encapsulated therein from the patient, wherein the encapsulated material is selected from the group consisting of a drug, therapeutic composition, medicament, dye, indicator, nutrient, sugar, vitamin, mineral, protein or protein fragment, salt, electrolyte, gene or gene fragment, product of genetic engineering, steroid, adjuvant, biosealant and gas.

25. The polymersome vesicle of claim 3, comprising a multi-block copolymer. --